* SWBAT observe what happens to acceleration as force goes up (keeping the same mass)

Sep 6-2:31 PM

SECA Physics
Thursday 24 October 2013

Welcome!!!

Make-up test TODAY!!!

H. Leslie Grebe

* Pick up:
  - slip of paper (for later)
  - whiteboard, marker, eraser

Centering...

Opening Question:

Does the size of a pitcher's "wind-up" affect how fast the ball goes?

YES

Why do you say that?

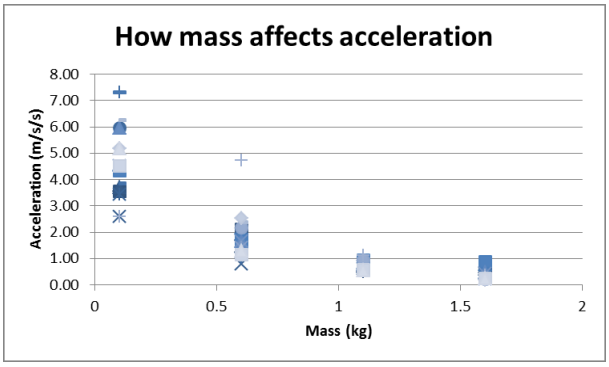
MORE TIME
⇒ MORE CHANGE IN SPEED

Eureka 4: acceleration
http://www.youtube.com/watch?v=gkcidRnzGfc

Sep 7-7:04 AM

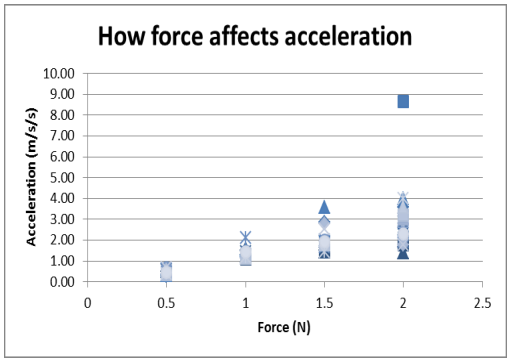
More mass

=> less acceleration



More force

=> more acceleration



Oct 21-1:23 PM

MORE MASS → LESS ACC:
MORE FORCE → MORE ACC:

Graphs of our experiments...

Newton's 2nd Law:

$$\rightarrow F = m\,a$$

FORCE = MASS · ACCELERATION

MON : ⟨SAME⟩ = ↑ · ↓

WED : ↑ = ⟨SAME⟩ ↑

Oct 28-6:55 AM

Newton's 2nd Law:

MORE MASS → LESS ACC.
MORE FORCE → MORE ACC.

$F = m a$

FORCE = MASS · ACCELERATION

$1N = 1 \frac{kg \cdot m}{s^2}$

Practice:

A 2 kg ball is accelerated at 3 m/s/s. What is the force accelerating it?

$F = m \cdot a = 2kg \cdot 3 m/s^2 = 6N = 6 \frac{kg \cdot m}{s^2}$

If I push with 10 N of force on a 5 kg block, what will its acceleration be?

$a = \frac{F}{m} = \frac{10N}{5kg} = 2 m/s^2$

A 1 N force accelerates a toy car 2 m/s/s. What is the mass of the car?

$m = \frac{F}{a} = \frac{1N}{2 m/s^2} = \frac{1}{2} kg = .5 kg$

Oct 26-7:31 AM

MAKE UP YOUR OWN...

$F = m a$

Oct 24-7:50 AM

Practice Problems

* Work alone or with a partner

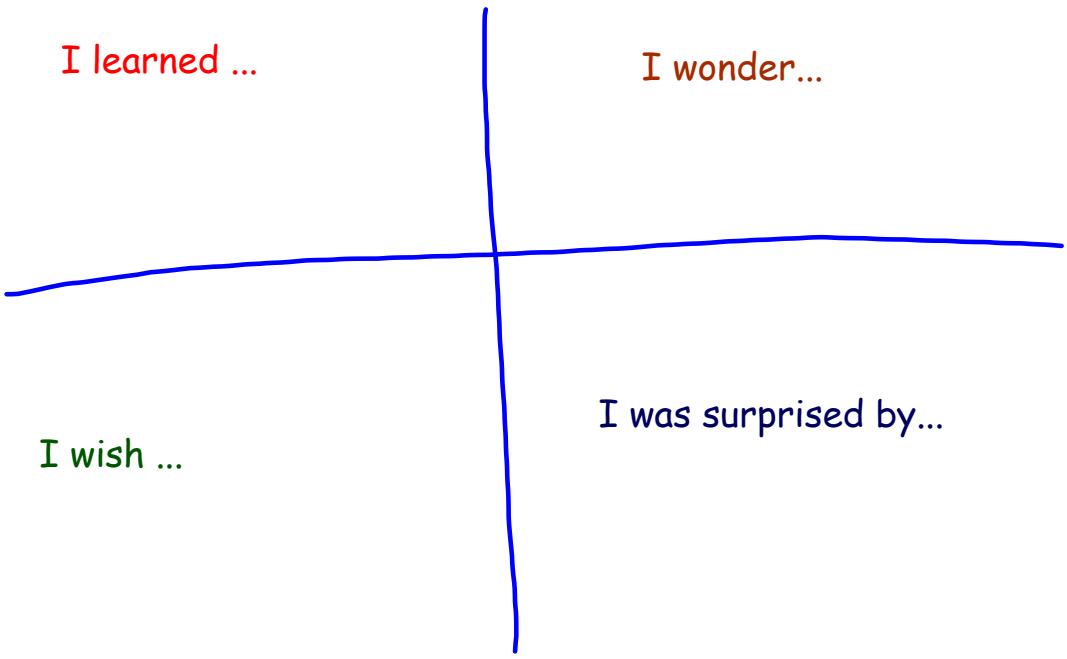
* Make sure you understand the first 4 problems (for sure)

* If you've got those, pick out a couple challenge problems that look do-able. Check with others to see what they got.

Oct 27-7:25 AM

Reaction Board

Pick **one** prompt and finish the sentence on your post-it



Oct 24-7:54 AM

Daily 3 Questions

* Every day except test/project days
* 3 Questions on the topics of the day
* Main source of daily points
* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. Newton figured out the math equation that says _____ equals mass times acceleration.
   A. Inertia
   B. Velocity
   C. Force

2. The "equation triangle" for that equation is:

3. A 2 kg object is accelerated at 3 m/s/s: What is the force accelerating it?

$F = m \cdot a = 2kg \cdot 3 m/s^2 = 6N$

Oct 8-6:48 AM